



RECEIVED
MAR 16 2015
CITY OF MONROE

October 17, 2014

Project: Hager Critical Areas Reconnaissance
Project Site: Parcel 27060200301900
Monroe, WA 98272
Client: Jim Hager
21314 Calhoun Road
Monroe, WA 98272
360-794-5106

Mr. Hager:

We completed a critical areas reconnaissance on Parcel 00777800000300, located in Monroe, Washington on October 14, 2014. We surveyed the entire parcel to determine whether any wetlands or streams are present. Data for sample plots P1-P5 are attached and their locations are shown on the attached figure.

In order for an area to be designated a wetland, evidence of hydrophytic vegetation, hydric soil, and wetland hydrology must all be present. Facultative herbaceous species dominate the site. Facultative vegetation meets the technical definition of hydrophytic or wetland vegetation. Blackberry thickets (facultative upland species) are present along the western and northern fence lines and a row of Douglas fir trees (facultative upland species) is present along the northern fence line. No indicators of wetland hydrology were observed in the sample plots or anywhere on the parcel. The City of Monroe drainage map shows drainage conveyances on the east, south and west sides of the parcel. The conveyance on the west side appears to be buried. The parcel appears to be effectively drained by the surrounding ditches.

Mapped soil units on the northern two-thirds of the parcel are Bellingham silty clay loam and Sumas silt loam, both listed hydric soils. The mapped soil unit on the southern one-third is Puyallup fine sandy loam. Soils in the southern one-third of the parcel matched Puyallup characteristics. Soils in the northern two-thirds did not match the typical profile for either Sumas or Bellingham soils. The surface layers are dominated by silt loam (see attached data sheets) but a light colored layer of clay loam, was encountered at depths of 9-12 inches in the pits. Redoximorphic features were present in the layer of clay loam, however, their physical characteristics indicate they are likely relict features that were formed before the site was effectively drained. The boundaries of the redoximorphic features are sharp, not diffuse as would be expected in actively hydric environments, and most were soft and crumbled to a powder when touched. No active pore linings or oxidized rhizospheres were observed in any of the soil pits. The matrix color of the clay loam layer was also lighter than the typical color of that layer in Sumas soil which likely indicates effectively drained conditions. According to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0* (USACOE, 2010), relict features still meet the technical definition of a hydric soil.

No evidence of current wetland hydrology was observed in any of the soil pits or anywhere on the parcel and the redoximorphic features appear to be relict indicating the parcel is effectively drained. Therefore,

there are no areas on the parcel that meet the technical definition of a wetland according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region*.

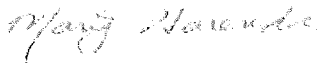
A wetland delineation was done in 2001 for a large wetland located on parcels to the north and east (Harmsen and Associates Drawing S1, attached). This wetland is shown as "Wetland 14" on the City of Monroe Critical Areas and Buffer Map (attached). Based on the 2001 delineation, the buffer for Wetland 14 abuts Parcel 27060200301900 along the eastern edge and northeast corner.

A perennial channel, called an "unclassified stream" on the City of Monroe Critical Areas and Buffer Map, is present in the southwest corner of the parcel. Washington Department of Fish and Wildlife Salmonscape maps show this stream as "modeled" salmonid habitat but known fish use has not been documented on the maps (apps.wdfw.gov/Salmonscape).

A constructed stormwater retention area, which collects runoff from the parking area south of the building, is present in the southwest corner of the parcel.

It was a pleasure working with you. Let me know if you need additional information or further assistance on this project.

Regards,



Mary Harenda
President
Essency Environmental

Attachments:

Locations of sample plots

Wetland delineation data sheets

City of Monroe Critical Areas and Buffers Map

City of Monroe Currie Road Wetland Mapping, prepared by Harmsen and Associates

Parcel 27060200301900



P1

P2

P3

P5

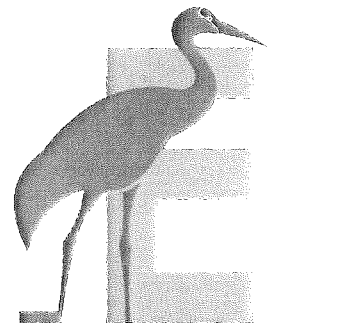
P4

Retention Pond

Perennial Channel

Google earth

400 ft



Essency
ENVIRONMENTAL

October 15, 2014

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Hager- 27060200301900 City/County: Monroe/Snohomish Sampling Date: 10/14/14
 Applicant/Owner: Jim Hager State: WA Sampling Point: P1
 Investigator(s): Mary Harenda & Andrew Wones Section, Township, Range: 2.27N,6E
 Landform (hillslope, terrace, etc.): River valley Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): A Lat: 47.850355 Long: -122.007652 Datum: WGS 84
 Soil Map Unit Name: Mapped as Sumas silt loam NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: Observed hydric soil indicators appear to be relict redoximorphic features. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel in question appears to be effectively drained by surrounding ditches.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	OBL species _____ x1 = _____
3. _____	_____	_____	_____	FACW species _____ x2 = _____
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: 12' dm)				Column Totals: _____ (A) _____ (B)
1. <u>Ranunculus repens</u>	<u>90</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index = B/A = _____
2. <u>Phalaris arundinacea</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	
3. <u>Rubus armeniacus</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
50% = _____, 20% = _____	_____	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
% Bare Ground in Herb Stratum _____				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Remarks:				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOILSampling Point: P1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR3/2	100					silt loam	
11-15	2.5Y6/3	80	7.5YR4/6	20	C	PL,M	clay loam	Relict redoximorphic features
							w/ high ash	
							content	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?

Yes

☒

No

☐

Remarks: Observed hydric soil indicators appear to be relict redoximorphic features. Boundaries are sharp, not diffuse. Features crumble to a powder when touched. Soil was tilled in the past which brought deeper layers closer to the surface. No active pore linings were present. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel appears to be effectively drained by surrounding ditches.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)

- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stresses Plants (D1) (LRR A)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present?

Yes

☐

No

☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology were observed on the parcel. The parcel appears to be effectively drained by surrounding ditches.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Hager- 27060200301900 City/County: Monroe/Snohomish Sampling Date: 10/14/14
 Applicant/Owner: Jim Hager State: WA Sampling Point: P2
 Investigator(s): Mary Harenda & Andrew Wones Section, Township, Range: 2.27N.6E
 Landform (hillslope, terrace, etc.): River valley Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): A Lat: 47.850355 Long: -122.007652 Datum: WGS 84
 Soil Map Unit Name: Mapped as Bellingham silt loam NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: Observed hydric soil indicators appear to be relict redoximorphic features. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel in question appears to be effectively drained by surrounding ditches.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	OBL species _____ x1 = _____
3. _____	_____	_____	_____	FACW species _____ x2 = _____
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: <u>12' dm</u>)				Column Totals: _____ (A) _____ (B)
1. <u>Agrostis sp.</u>	<u>50</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index = B/A = _____
2. <u>Holcus lanatus</u>	<u>47</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Medicago lupulina</u>	<u>3</u>	<u>no</u>	<u>FACU</u>	
4. <u>Ranunculus repens</u>	<u>trace</u>	<u>no</u>	<u>FAC</u>	
5. <u>Rubus armeniacus</u>	<u>trace</u>	<u>no</u>	<u>FACU</u>	
6. <u>Equisetum arvense</u>	<u>trace</u>	<u>no</u>	<u>FAC</u>	
7. <u>Phalaris arundinacea</u>	<u>trace</u>	<u>no</u>	<u>FACW</u>	
8. <u>Taraxacum officinale</u>	<u>trace</u>	<u>no</u>	<u>FACU</u>	
9. <u>Cirsium arvense</u>	<u>trace</u>	<u>no</u>	<u>FAC</u>	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
50% = _____, 20% = _____	_____	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
% Bare Ground in Herb Stratum _____				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Remarks:				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOILSampling Point: P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR3/2	100					silt loam	
6-11	2.5Y6/3	80	7.5YR4/6	20	C	PL, M	clay loam	Relict redoximorphic features
6-11	10YR3/2	100					silt loam	
11-15	2.5Y6/3	80	7.5YR4/4-4/6	20	C	PL, M	clay loam	Relict redoximorphic features
							sand	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):		Hydric Soils Present?	
Type: _____		Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/>
Depth (inches): _____			

Remarks: Observed hydric soil indicators appear to be relict redoximorphic features. Boundaries are sharp, not diffuse. Features crumble to a powder when touched. Soil was tilled in the past which brought deeper layers closer to the surface. No active pore linings were present. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel appears to be effectively drained by surrounding ditches.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> High Water Table (A2)	(except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This plot is the lowest elevation on the parcel. No indicators of wetland hydrology were observed on the parcel. The parcel appears to be effectively drained by surrounding ditches.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Hager- 27060200301900 City/County: Monroe/Snohomish Sampling Date: 10/14/14
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 Soil Map Unit Name: Mapped as Bellingham silt loam NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☒, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

Remarks: **Observed hydric soil indicators appear to be relict redoximorphic features. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel in question appears to be effectively drained by surrounding ditches.**

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
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4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
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3. _____	_____	_____	_____	FACW species _____ x2 = _____
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: <u>12' dm</u>)				Column Totals: _____ (A) _____ (B)
1. <u>Agrostis sp.</u>	<u>45</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index = B/A = _____
2. <u>Holcus lanatus</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Juncus effusus</u>	<u>10</u>	<u>no</u>	<u>FACW</u>	
4. <u>Phalaris arundinacea</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum _____				

Remarks:

SOILSampling Point: P3**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR3/2	100					silt loam	
6-8	2.5Y6/3	80	7.5YR4/6	20	C	PL, M	clay loam	Relict redoximorphic features
6-8	10YR3/2	100					silt loam	
8-12	2.5Y6/3	50	7.5YR4/4-4/6	50	C	PL, M	clay loam	Relict redoximorphic features
							sand	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____
 Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: Observed hydric soil indicators appear to be relict redoximorphic features. Boundaries are sharp, not diffuse. Features crumble to a powder when touched. Soil was tilled in the past which brought deeper layers closer to the surface. No active pore linings were present. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel appears to be effectively drained by surrounding ditches.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)

- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stresses Plants (D1) (LRR A)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology were observed on the parcel. The parcel appears to be effectively drained by surrounding ditches.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Hager- 27060200301900 City/County: Monroe/Snohomish Sampling Date: 10/14/14
Applicant/Owner: Jim Hager State: WA Sampling Point: P4
Investigator(s): Mary Harenda & Andrew Wones Section, Township, Range: 2.27N.6E
Landform (hillslope, terrace, etc.): River valley Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 47.850355 Long: -122.007652 Datum: WGS 84
Soil Map Unit Name: Mapped as Sumas silt loam NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☒, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Hydric Soil Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					
Wetland Hydrology Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>					
Remarks:	Observed hydric soil indicators appear to be relict redoximorphic features. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel in question appears to be effectively drained by surrounding ditches.								

VEGETATION – Use scientific names of plants

2017-2018 Wetland Data Collection Form

Site Name: _____

Tree Stratum (Plot size: _____)

	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	

Sapling/Shrub Stratum (Plot size: _____)

	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	

Herb Stratum (Plot size: 12' dm)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Agrostis sp.</i>	30	yes	FAC
2. <i>Poa pratensis</i>	60	yes	FAC
3. <i>Holcus lanatus</i>	5	no	FAC
4. <i>Trifolium repens</i>	2	no	FAC
5. <i>Ranunculus repens</i>	2	no	FAC
6. <i>Taraxacum officinale</i>	1	no	FACU
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
50% = 50, 20% = 20	100	= Total Cover	

Woody Vine Stratum (Plot size: _____)

	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Remarks: _____

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: $\frac{100}{\text{A/B}}$

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x1 = _____
FACW species _____	x2 = _____
FAC species _____	x3 = _____
FACU species _____	x4 = _____
UPL species _____	x5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is $\leq 3.0^1$

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOILSampling Point: P4**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
<u>0-8</u>	<u>10YR3/3</u>	<u>100</u>	_____	_____	_____	_____	<u>silt loam</u>	_____
<u>8-11</u>	<u>2.5Y6/3</u>	<u>80</u>	<u>7.5YR4/6</u>	<u>20</u>	<u>C</u>	<u>PL, M</u>	<u>clay loam</u>	<u>Relict redoximorphic features</u>
<u>8-11</u>	<u>10YR3/3</u>	<u>100</u>	_____	_____	_____	_____	<u>silt loam</u>	_____
<u>11-15</u>	<u>2.5Y6/3</u>	<u>50</u>	<u>7.5YR4/4-4/6</u>	<u>50</u>	<u>C</u>	<u>PL, M</u>	<u>clay loam</u>	<u>Relict redoximorphic features</u>
_____	_____	_____	_____	_____	_____	_____	<u>w/ high</u>	<u>ash content</u>
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?

Yes

☒

No

☐

Remarks: Observed hydric soil indicators appear to be relict redoximorphic features. Boundaries are sharp, not diffuse. Features crumble to a powder when touched. Soil was tilled in the past which brought deeper layers closer to the surface. No active pore linings were present. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel appears to be effectively drained by surrounding ditches.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)

- ☐ Water-Stained Leaves (B9)
 (except MLRA 1, 2, 4A, and 4B)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Stunted or Stresses Plants (D1) (LRR A)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9)
 (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?**

Yes

☐

No

☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology were observed on the parcel. The parcel appears to be effectively drained by surrounding ditches.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Hager- 27060200301900 City/County: Monroe/Snohomish Sampling Date: 10/14/14
 Applicant/Owner: Jim Hager State: WA Sampling Point: P5
 Investigator(s): Mary Harenda & Andrew Wones Section, Township, Range: 2.27N.6E
 Landform (hillslope, terrace, etc.): River valley Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): A Lat: 47.850355 Long: -122.007652 Datum: WGS 84
 Soil Map Unit Name: Mapped as Sumas silt loam NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: Observed hydric soil indicators appear to be relict redoximorphic features. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel in question appears to be effectively drained by surrounding ditches.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
50% = _____, 20% = _____	_____	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Total % Cover of:
1. _____	_____	_____	_____	Multiply by:
2. _____	_____	_____	_____	OBL species _____ x1 = _____
3. _____	_____	_____	_____	FACW species _____ x2 = _____
4. _____	_____	_____	_____	FAC species _____ x3 = _____
5. _____	_____	_____	_____	FACU species _____ x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____ x5 = _____
Herb Stratum (Plot size: 12' dm)				Column Totals: _____ (A) _____ (B)
1. <u>Ranunculus repens</u>	<u>60</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index = B/A = _____
2. <u>Poa pratensis</u>	<u>25</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:
3. <u>Trifolium repens</u>	<u>15</u>	<u>no</u>	<u>FAC</u>	
4. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation
5. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 – Dominance Test is >50%
6. _____	_____	_____	_____	<input type="checkbox"/> 3 – Prevalence Index is ≤3.0 ¹
7. _____	_____	_____	_____	<input type="checkbox"/> 4 – Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8. _____	_____	_____	_____	<input type="checkbox"/> 5 – Wetland Non-Vascular Plants ¹
9. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
10. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
11. _____	_____	_____	_____	
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum _____				
Remarks:				

Project Site: Hager- 27060200301900

SOIL

Sampling Point: P5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR3/2	100					silt loam	
3-9	2.5Y3/2	80	7.5YR4/6	20	C	PL, M	clay loam	Relict redoximorphic features
3-9	10YR4/2	100					silt loam	
9-15	10YR3/2	100					see right	gravel, cobble, sand, silt loam
9-15	2.5Y6/3	80	7.5YR5/6	20	C	PL, M	clay loam	Relict redoximorphic features

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present?

Yes ☒ No ☐

Remarks: Observed hydric soil indicators appear to be relict redoximorphic features. Boundaries are sharp, not diffuse. Features crumble to a powder when touched. Soil was tilled in the past which brought deeper layers closer to the surface. No active pore linings were present. According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region, Version 2.0 (USACOE, 2010), relict features still meet the technical definition of hydric soil. No current evidence of wetland hydrology was observed. The parcel appears to be effectively drained by surrounding ditches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology were observed on the parcel. The parcel appears to be effectively drained by surrounding ditches.

City of Monroe



Critical Areas and Buffers

STREAMS		WETLANDS		STEEP SLOPES	
Type 1		Cat I		40% or > slope	
Type 3		Cat II			
Type 3u*		Cat III			
Type 4		Cat IV			
Type 5		Unclassified Wetlands			
Unclassified Stream		Wetland Inventory No.			

Stream Inventory No.
*Unless determined an official tributary

BOUNDARIES

Urban Growth Area	
Monroe City Limits	
Shoreline Boundary	

BUFFERS*

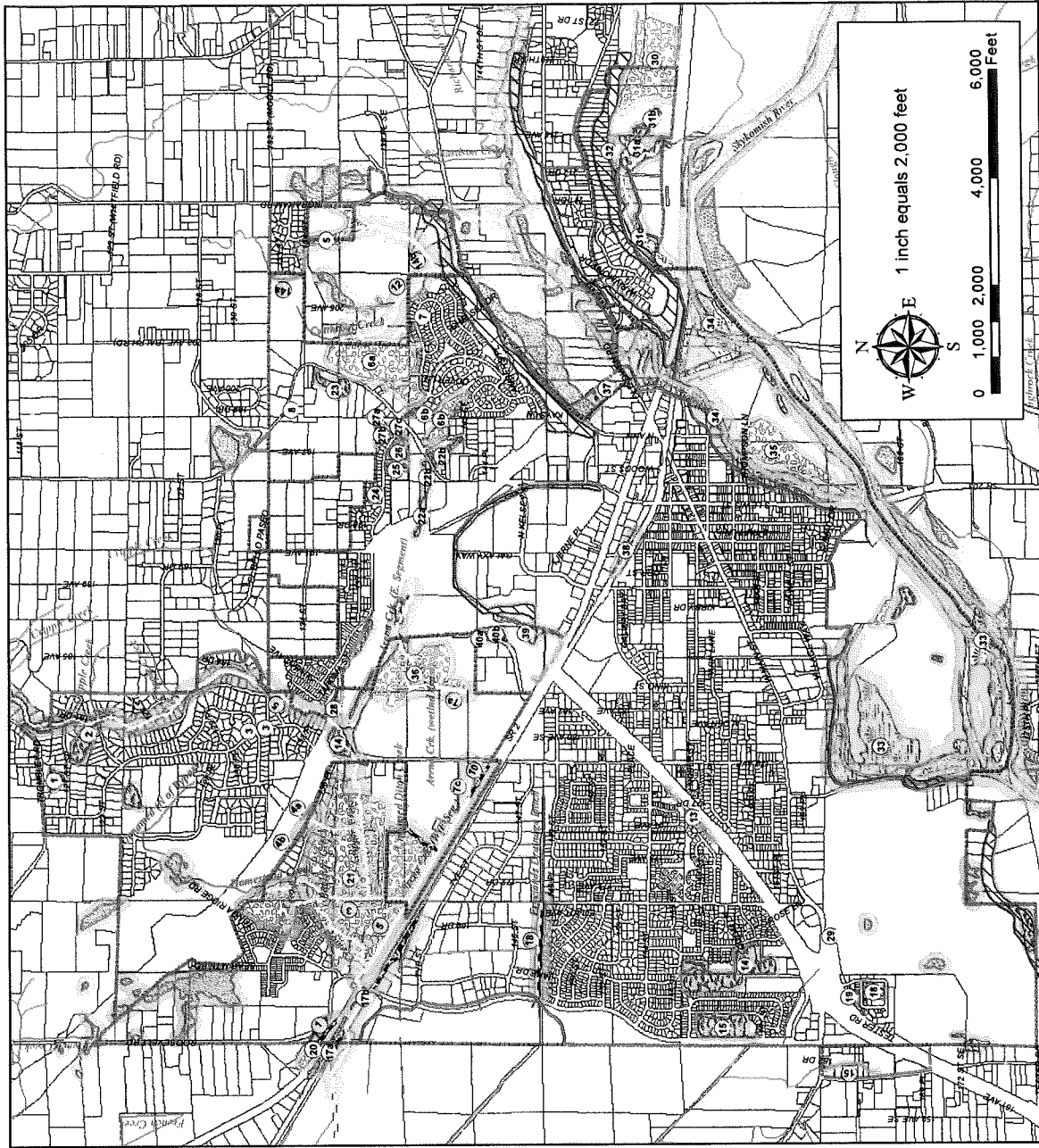
Combined Critical Areas Buffers	
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Notes:
1) Locations depicted are approximate boundaries for critical areas within the city limits. For more detailed maps and/or studies to identify the exact locations of known features or additional critical area features not illustrated on the map.
2) Critical areas stream change classification are approximate and subject to confirmation and refinement.
3) Classifications are subject to refinement based upon additional or updated fish use and seasonality of water flow information.



Map data shown is the property of the sources listed below. Inaccuracies regarding any aspect of data depicted. This map is not an actual survey of individually noted critical areas. Streams have been categorized using the water typing system defined in Monroe Municipal Code Chapter 20.05 (equivalent to WAC 222-16-031). Wetlands were classified using the original USFWS wetland mapping system. Wetland stream location are approximate based on a reconnaissance level evaluation. The City of Monroe and the Urban Growth Area may contain additional critical areas not identified on this map. Therefore this map is to be used for reference purposes only.

Source: City of Monroe GIS, 2008;
The Watershed Company,
Shenandoah County GIS, 2007
Project: Monroe Critical Area Buffers 11x17
Author: R. Wright
Revised: 12/04/08



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